

U.S. Serial No. 09/903,374
Group Art Unit # 3764

IN THE CLAIMS:

Please amend claim 1 and add claims 13-15 as follows. Please cancel claims 4, 10 and 11 without prejudice or disclaimer.

- 6151)
- C1
1. (Twice Amended) A prosthesis for surgical implantation to replace a segment of a blood vessel, the prosthesis comprising:
- a first tube of biologically compatible material having an exterior surface,
 - a membrane of polymer material positioned about the exterior surface of the first tube, and
 - at least one support structure wound along a winding axis about an exterior surface of the membrane to form axially spaced-apart ridges on the membrane that enable the material to substantially close a hole that is created when the material is punctured by a needle or cannula, the membrane having a microstructure of nodes interconnected by fibrils effective to facilitate bonding of the support structure to the membrane and inhibit delamination of the support structure from the membrane;
- wherein the ridges are spaced apart a distance effective to direct a needle to a puncture site at an angle that inhibits needle plowing and hole enlarging, the spaced apart distance being approximately less than or equal to 1.5 times the outer diameter of the needle.

- C2
13. (New) The prosthesis of claim 1, wherein the membrane is wrapped along the winding axis of the support structure.

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C2
14. (New) The prosthesis of claim 1, wherein the membrane is helically wrapped along the winding axis of the support structure.

15. (New) The prosthesis of claim 1, wherein the membrane is spirally wrapped along the winding axis of the support structure.
